

### 155.3.06

When cleaning equipment, furnish the scraping tools, brooms, water when required, and the labor. Water generally will be required to clean crawler-type tractors.

Have the earth-moving equipment inspected by the Department of Agriculture Inspector in Charge before moving it from the infested area.

#### **C. Notify the Department of Agriculture Inspector in Charge**

Notify the Department of Agriculture Inspector in Charge in advance concerning the movement of infested articles or equipment in order to plan the work and prevent operation delays.

Obtain the name, address, and telephone number of the Department of Agriculture Inspector(s) in Charge of the project from:

Georgia State Dept. of Agriculture  
Division of Entomology and Pesticides  
Agriculture Building  
State Capitol  
Atlanta, GA  
Phone: (404) 656-3641

USDA-APHIS  
Plant Protection and Quarantine  
1498 Klondike Road- Suite 200  
Conyers, GA 30094  
Phone: (770)922-9894

#### **155.3.06 Quality Acceptance**

General Provisions 101 through 150.

#### **155.3.07 Contractor Warranty and Maintenance**

General Provisions 101 through 150.

### **155.4 Measurement**

This item of work is not measured separately for payment.

#### **155.4.01 Limits**

General Provisions 101 through 150.

### **155.5 Payment**

This work is not paid for separately.

#### **155.5.01 Adjustments**

General Provisions 101 through 150.

## **Section 157—Survey Aids**

### **157.1 General Description**

This work includes constructing, maintaining, and removing (when specified by the Engineer) survey aids required at the locations shown on the Plans or modified Plans, or at locations designated by the Engineer. Survey aids may be required when line and distance control for excavation, embankment, and/or bridges require triangulation.

This work also includes disposing of survey aids, unless the Engineer directs to leave the aids in place.

#### **157.1.01 Definitions**

General Provisions 101 through 150.

#### **157.1.02 Related References**

##### **A. Standard Specifications**

General Provisions 101 through 150.

**B. Referenced Documents**

TT-E543

TT-529A

**157.1.03 Submittals**

General Provisions 101 through 150.

**157.2 Materials**

Comply with the following survey aid requirements:

**A. General**

The materials used to construct these expendable items do not require pre-inspection or sampling and testing. Replace, repair, or strengthen defective, worn, deteriorated, corroded, or unsatisfactory materials according to Subsection 157.3.07, “Contractor Warranty and Maintenance.”

**B. Timber and Piles**

Timber and piles may be untreated; however all piles shall be peeled. Timber may be of any commercial grade and species.

For triangulation stations, ensure that the center pile for the instrument mounting has a minimum diameter of 1 ft (300 mm) at a distance of 4 ft (1.2 m) from the butt. The minimum diameter of other piles in the station shall be 10 in (250 mm).

Use piles for survey targets that conform to the requirements of the Specifications. The butt diameter for timber walkway piles shall be at least 8 in (200 mm). Use piles that will maintain safe walkways for the duration of the Project.

**C. Plywood**

Use marine-type plywood for survey targets that is 0.75 in (19 mm) thick. Paint the plywood with coats that meet the requirements of the Federal Specification noted:

Apply an undercoat to all surfaces and edges (TT-E543); second and third coats—apply to all surfaces and edges (TT-E 529A, color number 27875); fourth and fifth coats—apply to colored areas (TT-529A, color number 21105).

**D. Sheet Metal Caps**

Use galvanized sheet metal caps for pile heads, galvanized large-headed roofing nails to attach the caps, and galvanized cable to wrap the pile clusters.

**E. Other Hardware for Connections**

Use bolts, nuts, washers, etc. of any commercial grade. They do not need to be galvanized.

**157.2.01 Delivery, Storage, and Handling**

General Provisions 101 through 150.

**157.3 Construction Requirements**

General Provisions 101 through 150.

**157.3.01 Personnel**

General Provisions 101 through 150.

**157.3.02 Equipment**

General Provisions 101 through 150.

**157.3.03 Preparation**

General Provisions 101 through 150.

**157.3.04 Fabrication**

General Provisions 101 through 150.

**157.3.05 Construction****A. Location of Base Lines, Triangulation Stations, and Survey Targets**

Possible locations of base lines, triangulation stations, and survey targets are shown on the Plans. Timber walkways are included as a bid item, but their locations may not be shown on the Plans. Actual and final locations of survey aids are based upon Contractors' own procedures and equipment methods.

The Contractor and the Engineer must agree on the most effective means to control the line and distance during construction. At the Preconstruction Conference, discuss with the Subcontractors the plan of operation for reaching this consensus.

After the conference, the Plans will be modified to show the locations of base lines and the number and locations of triangulation stations and survey targets. Timber walkway locations may not be shown on the modified Plans. After receiving the modified plans, make survey aids construction the first operation, including the installation of timber walkways if needed to provide access.

**B. Location of Survey Points**

After the Contractor constructs survey aids, the Engineer places instrument mountings and performs field checks and office calculations necessary to provide the location of the survey points.

Even though electronic data methods are used to calculate the point locations, the Engineer may not be able to designate survey point locations immediately. Time Charges will not be suspended during this period.

**C. Clearing and Grubbing**

The Engineer must be satisfied with the method and the location of all clearing and grubbing necessary for survey aid construction as a part of this work. Dispose of removed materials as directed by the Engineer.

**D. Framing**

Perform all framing and construct survey aids according to the Plan details, unless the Engineer permits alternate details.

**E. Triangulation Stations**

Drive pile clusters into the underlying firm material to provide instrument mountings. Ensure that these mountings are steady enough to use during wind and wave conditions.

**F. Survey Targets**

Drive the piling into the firm material to provide and maintain accuracy of the targets under weather and construction conditions specific to the Project area.

**G. Timber Walkways**

Drive piling deep enough to provide stability under weather and construction conditions specific to the Project area.

Walkways may be required to provide access to triangulation stations, to provide access to boats located at the edge of marsh or swamp areas at low water or low tide periods, or for other purposes as designated on the Plans or by the Engineer.

Alternate designs will be considered if they have equal strength, width, and safety.

**H. Height Control**

Regardless of elevations stated or implied on the Plans or in the Contract, the Engineer can determine how high to construct the survey aids.

Construct items above the extreme high-tide mark. The Engineer may require triangulation stations used initially for roadway item control to be built higher. These higher stations may be used in bridge control that may be in the initial or subsequent Contracts.

Constructing railing ladders and other vertical means of access are considered incidental to constructing survey aids.

**157.3.06 Quality Acceptance**

General Provisions 101 through 150.

**157.3.07 Contractor Warranty and Maintenance**

Maintain the survey aids as follows:

- A. Promptly replace, repair, or strengthen defective, unduly worn, corroded, deteriorated, or otherwise unsatisfactory material at the Engineer's request. Such maintenance is incidental to survey aid construction.
- B. Maintain survey aids to the Engineer's satisfaction to ensure that they are safe, have longevity, and perform accurately.
- C. If a survey aid will be used to control the work under another Contract:
  - 1. Do not remove that aid.
  - 2. Before moving off the Project or before relinquishing maintenance to another Contractor, perform the maintenance required to leave the aid in serviceable use for the future Work. The Engineer must approve of the maintenance. The additional maintenance is considered incidental to survey aid construction.

The subsequent Contractor's maintenance period will conclude when the survey aids no longer are needed for the duration of the Contract. The subsequent Contractor shall maintain the survey aids to the Engineer's satisfaction needed for Work, as provided in Subsection 105.05, "Cooperation by Contractor" as incidental to the work.

When the aids no longer are needed the Engineer will advise the responsible Contractor. The Contractor who used the aids last shall remove and dispose of the material to the Engineer's satisfaction. Removal and disposal is incidental to the work.

## **157.4 Measurement**

This work is measured for payment in the units shown in Subsection 157.5, "Payment," for accepted triangulation stations, survey targets, and timber walkways. Walkway measurements are horizontal and along center lines.

No separate measurements for payment are made to maintain, remove, or dispose of survey aids or to provide material, labor, or equipment required of a subsequent Contractor who does not originally construct the aids. All costs incidental to the work shall be included in other Contract Items.

### **157.4.01 Limits**

General Provisions 101 through 150.

## **157.5 Payment**

This work is paid for at the Contract Price per unit of measurement, complete in place, and when maintained and removed as directed.

These payments are full compensation for costs, direct and indirect, of complying with the requirements of this Specification.

Payment will be made under:

Item No. 157	Triangulation station	Per each
Item No. 157	Survey target	Per each
Item No. 157	Timber walkway	Per linear foot (meter)

### **157.5.01 Adjustments**

General Provisions 101 through 150.

## **Section 158—Training Program**

### **158.1 General Description**

The Contractor's Equal Employment Opportunity Affirmative Action Program includes on-the-job training aimed at fully qualifying trainees in the trade or job classification involved.

The Proposal specifies the number of trainees to be trained under this Specification.

This training specification is in implementation of 23 USC 140(a). As a part of the Contractor's Equal Employment Opportunity Affirmative Action Program, provide training as specified in this specification.

#### **158.1.01 Definitions**

General Provisions 101 through 150.